



I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

Dated: December 24, 2003 Signature: *Lawrence E. Russ*

(Lawrence E. Russ)

Docket No.: EMCORE 3.0-081
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Guo et al.

Application No.: 10/721,488

Group Art Unit: N/A

Filed: November 25, 2003

Examiner: Not Yet Assigned

For: GALLIUM NITRIDE-BASED DEVICES AND
MANUFACTURING PROCESS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Dear Sir:

It is respectfully requested that the references listed on the enclosed form be made of record and considered with respect to the above-referenced U.S. patent application. A copy of each non-U.S. patent reference is enclosed. Submission of the present Information Disclosure Statement should not be taken as an admission that the cited references are legally available prior art or that the same are pertinent or material.

In the event that any fee is due in connection with the present Information Disclosure Statement, the Commissioner is hereby authorized to charge the same to our Deposit Account No. 12-1095.

Dated: December 24, 2003

Respectfully submitted,

By *Lawrence E. Russ*

Lawrence E. Russ

Registration No.: 35,342

LERNER, DAVID, LITTENBERG,
KRUMHOLZ & MENTLIK, LLP

600 South Avenue West

Westfield, New Jersey 07090

(908) 654-5000

Attorney for Applicant

LD-458\

464963_1.DOC



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)				Complete if Known	
				Application Number	10/721,488
				Filing Date	November 25, 2003
				First Named Inventor	Shiping Guo
				Art Unit	N/A
				Examiner Name	Not Yet Assigned
Sheet	1	of	2	Attorney Docket Number	EMCORE 3.0-081

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code ² (if known)			
	AA	US-2003/0015708-A1	01-23-2003	Parikh, et al.	
	AB	US-2003/0062525-A1	04-03-2003	Parikh, et al.	
	AC	US-2003/0075728-A1	04-24-2003	Tooi, et al.	
	AD	US-5,158,909-B1	10-27-1992	Ohtsuka, et al.	
	AE	US-5,602,418-B1	02-11-1997	Imai, et al.	
	AF	US-5,622,877-B1	04-22-1997	Ashkinazi, et al.	
	AG	US-5,877,558-B1	03-02-1999	Nakamura, et al.	
	AH	US-5,956,578-B1	09-21-1999	Weitzel, et al.	
	AI	US-6,255,198-B1	07-03-2001	Linthicum, et al.	
	AJ	US-6,323,053-B1	11-27-2001	Nishikawa, et al.	
	AK	US-6,507,041-B1	01-14-2003	Nakamura, et al.	
	AL	US-6,524,900-B1	02-25-2003	Dahlqvist, et al.	
	AM	US-6,576,973-B1	06-10-2003	Collard, et al.	
	AN	US-6,586,777-B1	07-01-2003	Yuasa, et al.	
	AO	US-6,586,781-B1	07-01-2003	Wu, et al.	
	AP	US-6,602,764-B1	08-05-2003	Linthicum, et al.	
	AQ	US-6,608,327-B1	08-19-2003	Davis, et al.	
	AR	US-6,610,995-B1	08-26-2003	Nakamura, et al.	
	AS	US-6,437,374-B1	08-20-2002	Northrup, et al.	

FOREIGN PATENT DOCUMENTS						
Examiner Initials*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T ⁶
		Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)				
	BA	-WO 02/48434 A2	06-20-2002	Nitronex Corporation		
	BB	-DE 4210402	10-01-1992	Koichi		
	BC	-EP 0 380 340	04-29-1992	Cree Research Inc.		

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T ²
	CA	Brown, et al., "AlGaIn/GaN HFETs Fabricated on 100-mm GaN on Silicon (111) Substrates," Solid-State Electronics, Vol. 46, pp. 1535-1539 (2002)	
	CB	Feltin, et al., "Stress Control in GaN Grown on Silicon (111) by Metalorganic Vapor Phase Epitaxy," Applied Physics Letters, Vol. 79, No. 20, pp. 3230-3232 (November 12, 2001)	
	CC	Marchand, et al., "Metalorganic Chemical Vapor Deposition of GaN on Si (111): Stress Control and Application to Field-Effect Transistors," Journal of Applied Physics, Vol. 89, No. 12, pp. 7846-7851 (June 15, 2001)	
	CD	Armitage, et al., "Lattice-Matched HfN Buffer Layers for Epitaxy of GaN on Si," Applied	

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/B/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Complete if Known			
		Application Number	10/721,488		
		Filing Date	November 25, 2003		
		First Named Inventor	Shiping Guo		
		Art Unit	N/A		
		Examiner Name	Not Yet Assigned		
Sheet	2	of	2	Attorney Docket Number	EMCORE 3.0-081

		Physics Letters, Vol. 81, No. 8, pp. 1450-1452 (August 15, 2002)	
	CE	Manohar, et al., "Characteristics of Microwave Power GaN HEMTs on 4-inch Si Wafers," 2002 IEEE International Microwave Symposium, Seattle WA	
	CF	Kalisch, et al., "Growth and Characterisation of AlGaIn/GaN HEMT on Silicon Substrates"	
	CG	Dadgar, et al., "MOVCD Grown AlGaIn/GaN FETs on Si(111)"	
	CH	Poschenrieder, et al., "Bright Blue to Orange Photoluminescence Emission from High-Quality InGaIn/GaN Multiple-Quantum-Wells on Si(111) Substrates," Applied Physics Letters, Vol. 81, No. 9, pp. 1591-1593 (August 26, 2002)	
	CI	Jang, et al., "Characteristics of GaN/Si(111) Epitaxy Grown Using Al _{0.1} Ga _{0.9} N/AlN Composite Nucleation Layers Having Different Thicknesses of AlN," Journal of Crystal Growth, Vol. 241, pp. 289-296 (2002)	
	CJ	Wan, et al., "Growth of Crack-Free Hexagonal GaN Films on Si(100)," Applied Physics Letters, Vol. 79, No. 10, pp. 1459-1461 (September 3, 2001)	
	CK	Tran, et al., "Growth of InGaIn/GaN Multiple-Quantum-Well Blue Light-Emitting Diodes on Silicon by Metalorganic Vapor Phase Epitaxy," Applied Physics Letters, Vol. 75, No. 11, pp. 1494-1496 (September 13, 1999)	
	CL	Dadgar, et al., "Thick, Crack-Free Blue Light-Emitting Diodes on Si(111) Using Low-Temperature AlN Interlayers and <i>In Situ</i> Si _x N _y Masking," Applied Physics Letters, Vol. 80, No. 20, pp. 3670-3672 (May 20, 2002)	

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Applicant's unique citation designation number (optional). ²Applicant is to place a check mark here if English language Translation is attached.

Examiner Signature		Date Considered	
-----------------------	--	--------------------	--